

Abstract of WO 9933355 (A2)

The invention relates to an oil, fat and/or lecithin-based fat blend containing polyunsaturated fatty acids. The inventive fat blend is characterised in that the fatty acids gamma-linolenic acid, stearidonic acid and eicosapentaenoic acid together make up 10 to 500 mg/g total fatty acids. The gamma-linolenic and eicosapentaenoic acids each represent 20 to 50 wt.% and the stearidonic acid represents 15 to 50 wt.% of the sum of these three fatty acids. The inventive fat blend can be incorporated into a dietetic or a pharmaceutical product, especially a dietetic food, and can be used especially for administering to patients suffering from chronic/inflammatory diseases, disorders of the lipid metabolism, a weakened immune function and/or a restricted lipolytic capacity of the gastrointestinal tract.

Fat mixture

SPECIFICATION the invention relates to a fat mixture on basis of oils, fats and/or Lezithinen with multiple unsaturated fatty acids, this fat mixture a contained dietary or pharmaceutical agent and the use of this fat mixture and/or. this dietary or pharmaceutical agent.

The body is as well known in the layer to synthesize certain satisfied and simple unsaturated fatty acids including the stearic acid (C18-0) and the oleic acid (c1 8-1w9) endogenous. The body is not however in the layer to synthesize the polyunsaturated fatty acids linoleic acid (18-2w6) and alpha linolenic acid (C18-3w3), required for it, endogenous so that this fatty acid exogenous with the food supplied to become to have and therefore also as essential fatty acids designated become.

From these essential fatty acids become then in the human fat acidic metabolism by chain extension (elongation) and Desaturierung a variety of längerkettigen (C20 and C22) and high desaturierten fatty acids synthesized. With the fatty acids, which are derived from the linoleic acid (C18-2w6), one speaks of the w6-Familie, while from the alpha linolenic acid the W3 family is derived. These multiple unsaturated fatty acids become in the English also as polyunsaturated fatty acids or PUFA designated. Concerning the abbreviation used in the framework of the present supports and/or. Nomenclature in the rest of complementary referred to " lipid analysis " of Wil liam W. Christie, Pergamon press 1973.

The multiple unsaturated fatty acids mentioned are structural ingredients of any cell membranes of the body. Unite particular fatty acids from w3-und the w6-Familie come special Bedeu tung, since from them particular molecules become synthesized, which become designated in their entirety as Eicosanoide.

Bottom Eicosanoiden as comprehensive term one understands today an extraordinary various and complex mixture about physiological highly effective, hormone-similar compounds, which participate in various regularization procedures in the body. The Eicosanoide leads itself particularly from the w6-und w3-desaturierten C20-Präkursorfettsäuren dihomogamma linolenic acid (DGLA; 20-3w6), arachidonic acid (AA; 20-4w6), Eicosatetraensäure (20-4w3) and eicosapentaenoic acid (EPA; 20-5w3) off. The biological effects that from the multiple unsaturated fatty acids formed Eicosanoide differ extraordinary and depending upon that whether the Eicosanoide is derived from the fatty acids of the w6-oder W3 family. In the Allgemeinen the Eicosanoiden of the W3

series anti-inflammatory effects attributed become, while the Eicosanoide of the arachidonic acid from the w6-Familie per-inflammatory character possesses. Due to the nourishing practices and nourishing way, in particular in the western countries, it comes now to an increase of the Arachidonsäuregehalte into the Membranlipiden of the body cells and thus to an increased synthesis, of the per-inflammatory Eicosanoide which can be derived from the arachidonic acid. Lately now tried chronic-inflammatory diseases various by the targeted dietary ingestion of particular multiple unsaturated fatty acids the disease pictures became as well as of Lipidstoffwechselstörungen positive to affect. Thus for example the EP-A describes 0,756,827 and the EP-A 0,764,405 the administration of Fettblends and/or. of fat mixtures on basis of night candle oil and/or fish oil to the modulation of the immune system. The DE-A 39 24 607 empfiehlt the use of dietary products on basis of Fish oil for blood pressure lowering with hyperlipidemias. In the EP-A 0,457,950 beyond that the use of Stearidonsäure in pharmaceutical compositions becomes the treatment of diseases with inflammatory origin described.

On the market fat emulsions become also already the enteric diet offered, those as substantial fatty acids gamma linolenic acid (GLA), eicosapentaenoic acid (EPA) and partially also Stearidonsäure (SA) contain, which is to serve for an immune modulation. With all the available products the multiple unsaturated fatty acids brought to the application stand for the products and also with on the market, described in the listed documents, however in an unbalanced ratio to each other.

Object of the instant invention is it to make an improved fat mixture available and these contained dietary or pharmaceutical agent with which the fatty acid metabolism and in particular the Eicosanoidstoffwechsel can become in optimal manner affected, so that by the administration of this fat mixture and/or. Food the symptomatology and the clinical problems of patients with various diseases significantly improved become.

Dissolved one becomes this object by a fat mixture and this fat mixture contained dietary food in accordance with the teaching of the claims.

It became surprising found that the Eicosanoidstoffwechsel of the arachidonic acid can become effective and optimized affected by the fact that the multiple unsaturated fatty acids gamma linolenic acid (GLA), eicosapentaenoic acid (EPA) and Stearidonsäure (SA) in a specific balanced, ratio to each other administered become. It is therefore stressed that in the fat mixture the GLA and the EPA in each case 20 to 50 Gew. - % and the SA 15 to 50 Gew. % out these three fatty acids formed sum constitute. Besides the sum of these fatty acids constitutes together 10 to 500 mg per g of the entire fatty acid (sum of the altogether present fatty acids).

If the three fatty acids mentioned in the stressed amount and in the stressed ratios become administered, then the generation of per-inflammatory Eicosanoiden of the arachidonic acid becomes negative affected. Besides the physiological equilibrium of the Eicosanoide becomes displaced regarding an anti-inflammatory and lipidsenkende effect. Also one can be stimuliert and improved development or illness-conditional reduction of the lipolytic capacity of the gastrointestinal tract by the fat mixture according to invention. Thus a fat mixture provided, which is characterised to each other by high contents and a specific ratio at certain multiple unsaturated fatty acids, becomes according to invention. This fat mixture or this contained food can become at patients with akut-und chronic-inflammatory diseases, at patients with autoimmune diseases, at patients with fat

metabolic disturbances (hyperlipidemias), at patients with weakened immune function and at patients with reduced lipolytic capacity of the gastrointestinal tract administered. Other fields of application that claimed subject-matters are other down more near explained according to invention.

During the fat mixture according to invention the fatty acids are preferably present in that form, in which they are in the raw material brought to the application oil, fat and Lezithin bonded, D. h. in particular as triglycerides and phospholipids. These fatty acids can however altogether or partly also than free fatty acids, when ester, for example simple alkyl esters such as ethyl esters, or as salt to be present. Also it is possible to bring umgeesterte fatty acids to the use. So the mixture according to invention can be supplementiert for example with such free fatty acids, simple fatty acid esters and fatty acid salts. It is even according to invention covered that the mixture according to invention exclusive consists of these free fatty acids, simple fatty acid esters and/or fatty acid salts and therefore terminolo gisch actual also as fat acidic mixture to be designated would be.

The fat mixture according to invention contains appropriately various oils, fats and/or Lezithine. So the fat mixture can contain of for example various such oils, fats and Lezithine, which do not ren or only small contents of multiple unsaturated fat outer exhibit. In order latter fatty acids then into the fat mixture to inkorporieren, become these oils, fats and/or Lezithine with such mixed, the which planar multiple unsaturated fatty acids possess.

With the oils, fats and/or Lezithinen it can concern conventional, for example animal and vegetable. However can become also oils, fats and Lezithine microbial and/or synthetic origin and thus also new developed starting materials used.

Also only still in the future raw materials which can be developed can become used, because concerning the starting materials brought to the application it depends only on the fact that they contain the specified fatty acids in the listed amounts and ratios.

After a preferable embodiment the fatty acids GLA, SA and EPA constitute together 10 to 100 mg per g Inge including present fatty acids; besides the GLA and the EPA make in each case 35 to 45 Gew. - % and the SA 15 to 25 Gew. - % of the sum of these three fatty acids out. If in the framework of the present supports of a range the speech is, then all are the intermediate values disclosed falling in this range. Thus the way of writing places 10 to 100 mg and/or. 10 to 500 mg only a truncated way of writing for all intermediate values, in particular all integer values, for example 10.11, 12.13.15,... 30, 31, 32, 33,... 65,66,67,68,... 85,... 104,105,106,... 150, 151.152,... 187,188,189,190,... 215,216,217,... 241,242,243,... 268, 269.270,... 280,... 290,... 300,301,302,303,304,..., 310,..., 320,..., 330,..., 340,..., 350,..., 360,361,..., 370,..., 380,..., 390,..., 400,..., 410,..., 415,416, 417,..., 420,..., 430,..., 440,..., 450,..., 460,..., 470,..., 480,..., 490,491,..., 495,496,... Corresponding one applies to the weight percentage ranges from 15 to 50 Gew. - %, 35 to 45 Gew. - % and 15 to 25 Gew. - %. Thus at least all intermediate integer values are disclosed, for example 15.18.21.24.27.28.31.33.37.39.40.42.44.47 and 49. Besides are also all of the larger ranges covered smaller ranges with enclosure.

Above the saying applies also concerning the fat contents stressed in the present supports in the form of energy % and to the stressed weight percentage data to the Lezithine. In particular all integer values between the limits of these ranges are disclosed also here.

After a preferable embodiment the fat mixture contains also of arachidonic acid (AA). The quotient from the sum from GLA +SA+EPA to the AA amounts to thereby at least 10: 1.

After one further preferable embodiment amounts to the Lezithingehalt up to 40 Gew. - % the Gesamtlipide (= sum of the oils, fats and Lezithine), preferably 1 bis 10 Gew. - %. After one further preferable embodiment constitutes the sum of the fatty acids GLA, SA and EPA up to 120, present in the fat mixture in the form of phospholipids, mg/g the entire fatty acids, preferably 0.05 to 50 mg per g of the entire fatty acids. These fatty acids present in the form of phospholipids can constitute thus for example 0.05.0.1.0.5.1.2.3.4.5.6.7.8.9 and 10 mg per g entire fatty acids. Also in this case again all ranges located between the limits are disclosed.

Like already stated, being able to manufacture the fat mixture according to invention by one animal, vegetable, microbial and/or synthetic oils, fats and/or Lezithine in certain quantities mixed with one another.

As vegetable Oie " conventional " oils know out monound dicotylen plants for the example (like z. B. Kokosöl, Palmkernöl, palm oil, Soyaöl, sunflower oil, rapeseed oil) used become. To the targeted increase of the gamma Linolen (GLA) - and Stearidonsäure (SA) - content become "particular " vegetable oils such as Borretschöl, night candle oil, Echiumöl, Trichodesmaöl, as well as the seed oils other species z. B. from the Familien of the Boraginaceae, Scrophulariaceae, Onagraceae and Saxifragaceae used. In addition for example prepared and also GLA and SA-rich concentrates obtained by chromatografische separation can become from the sources mentioned used on chemical or enzymatic paths. As animal fats and oils can for example egg oils, fish oils and oils of marine mammals, as well as for example on chemical and/or. enzymatic paths of hergestellte or also eicosapentaensäurereiche and/or stearidonsäurereiche concentrates from these raw materials used, obtained by chromatografische separation, become. Further gamma Linolen, Stearidon as well as and fats from microbial origin know eicosapentaenoic acid of contained oils and/or. corresponding Algen-und of mushroom oils as well as from this concentrates used which can be derived become.

Further specific GLA, SA-und can become EPA contained Lezithine used in the fat mixture according to invention; by this to call Lezithine from egg yolk, preferably such, are which in a modified feeding a w3-PUFA stressed fatty acid spectrum exhibits, außerdem other natural w3-PUFA-enthaltende Lezithine, for example from fishes, marine mammals or from microorganisms as well as such Lezithine, which became enriched on chemical or enzymatic paths in their content at GLA, SA and EPA, preferably in the sn-2-Stellung at the Glyceringerüst. Further mittelkettige triglycerides (MCT) can become used in the stressed fat mixture. The here used terms of " fats, oils and Lezithine " designate technological starting products. Designations such as phospholipids and triglycerides refer itself however on chemical species. So an oil knows quite also phospholipids (frequent also as Lezithine designated becomes) and a Lezithin also triglycerides contain. As oils thereby in the trade available oils used are entschleimt in particular, and/or. are entlezhiniert. However also the not treated crude oils can become depending upon requirement the application brought.

The stabilization of the stressed, high-unsaturated fat mixture before autoxidativem decay the person skilled in the art known natural and synthetic Antioxydantien (like Ascorbylpalmitat, tocopherols, etc.) can become used. The further inertial contents of

Lezithinen of animal, vegetable and/or microbial origin to the oxidation stability the same, stressed in the fat mixture.

In the subsequent table 1 the raw materials are and/or. Fats, oils and Lezithine listed, out of which various preferred remark forms the fat mixture according to invention by mixing prepared became. In the likewise subsequent table 2 is the resultant fatty acid composition of some of the embodiments shown listed in the table 1. The term "dazzle" is thereby a synonym for the term "mixture".

Table 1: Composition of exemplary fat mixtures (indications in Gew. - %) Raw material dazzle A dazzle B dazzle C dazzle D dazzle E dazzle F MCT fat 30,0 30,0 30,0 30,0-30,0 30,0 Palm oil 26,0 16,5 20,0 26,0 26,0 26,0 Soyaöl 16,5 11,5 8,0 16,5 17,5 13,5 Cocosnuss Öl 30,0 Borretschöl 8,0 10,0 12,0--Echium oil 11,0 13,0 18,0 19,0 19,0 19,0-16,0---Fischöla fish oil B 6,5-10,0 6,5,6,5,6,5 Eilipide/Eilezithine 2,0-2,0 2,0,1,0,5,0 Fischlezhithin 3 table 2: Fatty acid composition of the fat mixtures listed in the table 1 (indications in Gew. - % if differently indicated) parameter do not dazzle A dazzle B dazzle C dazzle D @ 8-0 17,2 16,5 16,5 2,5 @ 10-0 12,0 13,3 13,3 1,9 @ 12-0 0,4,0,1,0,1 13,9 14-0 0,4,1,4,0,3,5,7 16-0 14,1 13,0 11,7 16,6 @ 18-0 stearic acid 2,7,2,5,2,6,3,6 18-1w9 oleic acid 19,2 15,8 16,8 21,5 @ 18-2w6 linoleic acid 17,5 15,2 15,1 15,8 @ 18-3w6 gamma linolenic acid (GLA) 3,1,3,8,4,8,2,4 18-3w3 alpha linolenic acid 4,2,4,5,5,7,6,4 18-4w3 Stearidonsäure (SA) 1,6,2,1,2,5,2,5 20-3w6 those-homo-gamma-linolenic acid (DGLA) 0,02 0,04 0,05 0,02 20-4w6 arachidonic acid (AA) 0,2 0,23 0,2,0,2 20-5w3 eicosapentaenoic acid (EPA) 3,0,3,2,4,7,3,0 22-6w3 Docosahexaensäure 1,0,2,9,1,5,1,0 Verh.Gesamt-w6zu-w3 2,1:1 1,5:1 1,4:1 1,4:1 1 Verh.18-3w6+18-4w3+20-5w3 to 20-4w6 38,5:1 39,3:1 51,9:1 39,5:1 79 #A: 18-3w6+18-4w3 +20-5w3 7,7,9,1 11,9 7,9 18-3w6 (in % #A) 40,3 41,7 39,9 30,4 @ 18-4w3 (in % #A) 20,8 23,0 21,2 31,7 @ 20-5w3 (in % #A) 39,0 35,4 38,9 38,0 @ The fat mixture according to invention can be also a dietary or a pharmaceutical agent to the state of the art incorporated.

This includes also the use of the fat mixture or also from ingredients in microencapsulated form also. The other ingredients of this food and/or. Diätetikums or pharmaceutical can be known as well as arbitrary nature and are the corresponding needs adapted. Preferably it concerns thereby a Fettmulsion, a finished food, a liquid food, a reconstituted powder food or a too rekonstituierende powder food. These foods serve in particular for the parenteral, enteric and/or oral administration. It can concern however also around a food latch plate or a brushable paste.

The liquid foods according to invention and to rekonstituierenden powder foods serve in particular for the parenteral, enteric and/or oral diet and preferably exhibit a fat content, which amounts to 10 to 55 energy %; the energy density 0,5 to 3,0 preferably amounts to kcal/ml. The fat content constitutes further in particular preferred 25 to 40 energy %, while the energy density in particular preferred 1,1-1,4 kcal/ml amounts to.

The dietary foods according to invention do not only contain a fat mixture and/or. one fat-dazzle the here described kind to separate can also different products, for example egg white of animal and/or vegetable origin, z. B. Milk, whey, peas, wheat and/or soya, in the form of complex and/or hydrolysed egg white, with or without addition of free amino acids and/or dipeptides as well as carbohydrates (maltodextrins), vitamins, ballast materials, Mineralstoffe, trace elements, choline, Taurin, carnitine, inositol, Nucleotide in different quantities as well as if necessary waters. These other ingredients can become

depending upon liking with the fat mixture blended. In the subsequent table 3 are Lipid and the fatty acid contents of some fat mixtures according to invention listed, which are in liquid foods incorporated. In the table 4 the values for the compositions of various are according to invention. EN Flüssignahrung towards listed. In table 5 are example prescriptions for erfindungsgeangegeben.mä#eFettemulsionen

LipidundFettsäuregehaltebeispielhafterFlüssignahrungengenenthaltendeinerverfindungsgemäß

TAabelle3: Fat mixture fat mixture (indications /1500ml; if-not-differently-indicated) mg aufBasisBlendAaufBasisParameterUnit aufBasisBlendFC

Total energy 187518751875

25,035,025,035,025,035,0Gesamt Fetten% 72,952,172,952,172,9g52,1

Phospholipidgehalt % 2 2 5 30.0MCT% 30.0 mg911512760786511010729210208LA18-2w6 mg161522602479347112501750GLA18-3w6 mg218830632964414932814594ALA18-3w3 mg83311671318184513021823SA18-4w3 DGLA 20-3w6 mg 10 15 16 22 16 22 AA 20-4w6 mg 104,146,120,168,156,219 EPA 20-5w3 mg 1563 2188 2422 3391 1563 2188

DHA 22-6w3 mg 521,729,755 1057 625,875 401056156234872841155760#18-3w6+18-4w3+20-5w3mg (entire ones) 000

0 0 11,) 0 Table 4: Composition of exemplary erfindungsgemä#er liquid foods (the indications refer itself in each case on 100 ml) ex. 1 ex. 2 energy kcal to 125,100 Eiwei# en% 24 24 Eiwei# g 7.5 6 glutamine (g) g 1.51 1.2 arginine (g) g 0.87 0.70 fat en% 30 30 fat g 4.2,3.3 Lezithin g of 0,084 0.066 carbohydrates en% 46 46 g of 14.4 11.5 ballast materials g of 0-0.9 0-7.2 vitamins, mineral materials and trace elements full balances full balances to selenium (g) g 2 - 15 2 - 15 Vit.A (mg RE) mgRE 0.05 - 0.3 0.05 - 0.3 Vit.C (mg) mg 4 - 35 4 - 35 Vit.E (mg width unit) mgTE 0.5 - 15,0.5 - 15 beta carotene (mg) mg. 0 1.5 0 1.5 Other cloths: Choline mg 10 - 100 10 - 100 Taurin mg 0 50 0 50 carnitine mg 0 20 0 20 inositol mg 0 30 0 30 waters on 100 ml on 100 ml Table 5: Embodiments of the stressed fat emulsions (indications in g/100 ml)

Content content of ingredients %-distribution

3,0,6.0 MCT fat 30%

3,0 6, 0 Canola oil 30%

1,2,2.4 fish oil B (45/10) 12%

1,8 3, 6 Borretschöl 18%

1,0,2.0 Echiumöl 10%

Sum: Sum:

10 20 oils and fats 100%

1,2,1.2 Eilezithin

2,25 2.25 Glycerol USP to 100 ml to 100 ml waters (to the injection) The fat mixture according to invention and this contained dietary or pharmaceutical agent according to invention can become the treatment of patients with the adjusted disease states used in particular: 1. Patient with akut-und chronic inflammatory diseases, with autoimmune diseases and with weakened immune function: z. B. Patient with disease Crohn, psoriasis, chronic Polyarthritis, rheumatism; Patient with neurodegenerativne diseases, patients with pulmonaren diseases, patients in the post office-operative phase, HIV/AIDS patient, tumor patient, patient with cystic fibrosis, septeische patients, high risk patients (infection-threatened, to the avoidance/reduction of nosokomialen infections), critical patient (z. B. Polytraume, post office-traumatic, Postagressions metabolism, metabolic

stress), with patients with generalized inflammation syndrome (SIRS: "systemic inflammatory response syndromes"), multi-organ failure and/or for Vorbeugung the same; with coronary patients after Angioplastie and/or. Bypass surgery (restenosis, graft occlusion) to the support of the Immunsuppressionstherapie with patients after organ transplant ions and with diabetics.

2. Patient with Lipidstoffwechselstörungen: z. B. Patient with cardiovascular diseases, hyperlipidemias, metabolic syndrome, and. A.

3. Patient with reduced lipolytic capacity of the gastrointestinal tract z. B. Patient with disease Crohn, colitis joke-pink, genetic (Cysti fibrosis), weak one syndrome) development-more conditional (newborn children) or purchased exokriner Pankreasinsuffizienz, with short intestine syndrome and/or. by jets or cytostatic drugs damaged gastrointestinal tract, after acute or chronic complete parenteral diet as well as Patient with diseases of the liver and Gallenwege (chronic hepatitis; Alcohol syndrome, fat liver).

Claims

1. Fat mixture, constructed from the ingredients, those selected are from the group existing from oils, fats, Lezithinen, fat acidic and their salts and esters, and contained multiple unsaturated fatty acids, characterised in that the fatty acids gamma linolenic acid, Stearidonsäure and egg cosapentaensäure together 10 to 500 mg/g entire fatty acids constitute and the gamma linolenic acid and the eicosapentaenoic acid in each case 20 to 50 Gew. - % and the Stearidonsäure 15 to 50 Gew. - % of the sum of these three fatty acids constitute.

2. Fat mixture according to claim 1, characterised in that the fatty acids gamma linolenic acid, Stearidonsäure and egg cosapentaensäure together 10 to 100 mg/g entire fatty acids constitute and the gamma linolenic acid and the eicosapentaenoic acid in each case 35 to 45 Gew. - % and the Stearidonsäure 15 to 25 Gew. - % of the sum of these three fatty acids constitute.

3. Fat mixture according to claim 2, thereby gekennzeichnet that the gamma linolenic acid and the eicosapentaenoic acid approx. in each case. 40 Gew. - % and the Stearidonsäure approx. 20 Gew. - % of the sum of these three fatty acids constitute.

4. Fat mixture after one of the preceding claims, characterised in that it arachidonic acid contains and that the quotient from that

Sum of the gamma linolenic acid plus Stearidonsäure plus Eicosapentaensäure to the arachidonic acid at least 10: 1 amounts to.

5. Fat mixture after one of the preceding claims, thereby characterized, there (1 that content at phospholipids up to 40 Gew. - amounts to % of the entire lipid (= sum of the oils, fats and Lezithine).

6. Fat mixture according to claim 5, characterised in that the phospholipids 1 to 10 Gew. - when % the Gesamtlipide ausma.

7. Fat mixture after one of the preceding claims, characterised in that the sum in the fat mixture in the form of Phospholipide the present fatty acids gamma linolenic acid, Stearidonsäure and eicosapentaenoic acid up to 120 mg/g entire fatty acids out make.

8. Fat mixture after one of the preceding claims, thus, e marks that the sum in the fat mixture in the form of Phospholipide the present fatty acids gamma linolenic acid, Stearidonsäure and eicosapentaenoic acid 0.05-50 mg/g entire fatty acids ausma chen.

9. Dietary one or pharmaceutical agent a contained fat mixture after one of the previous claims 1 to 8.
10. Agent according to claim 9, thus, e marks itself that it around a fat emulsion, a finished food, flow a victory food, a reconstituted or to rekonstituierende powders food, in particular to the parenteral, enteric and/or oral Administration, over a food latch plate or around one caper-company-rear ge paste acts.
11. Agents according to claim 10 in form of a liquid food or rekon stituierten powder food to the parenteral, enteric and/or oral diet, by the fact identified nzeich net that the fat content constitutes 10 to 55 energy % and the energy dense 0.5 to 3.0 amounts to kcal/ml.
12. Agent according to claim 11, nze I identified thus net that the fat content constitutes 25 to 40 energy % and the energy dense 1.1-1.4 amounts to kcal/ml.
13. Agent after one of the claims 8 to 12 in form of one liquid near rung or reconstituted powder food, thereby identified nzeich net that the fatty acids gamma linolenic acid, Stearidonsäure and egg cosapentaensäure together 0.5 to 30 g/1500 ml the liquid Food constitute.
14. Agent according to claim 13, thus, e marks that the gamma linolenic acid, Stearidonsäure and Eicosapentaen acidic together 1 to 10 g/1500 ml the liquid food ausma chen.
15. Use of a fat mixture after one of the claims 1 to 8 or a dietary or a pharmaceutical agent after one of the claims 9 to 14 to the parenteral, enteric and/or oral Administration at patients with chronic-inflammatory it offenses, with Lipidstoffwechselstörungen, with more weakened in munfunktion and/or with reduced lipolytic capacity of the gastrointestinal tract.